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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

ALABAIDI, HAYTHIM J

ART UNIT PAPER NUMBER

2161

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/883,499

Applicant(s)

BEDELL ET AL.

Examiner

Haythim J. Alaubaidi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1- 3, 5-12 and 14-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-12 and 14-21 is/are rejected.
- 7) ☒ Claim(s) 22-25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The Examiner acknowledges the RCE Amendment of August 16, 2004.
2. This Action is a Non-Final Office Action in response to the amendment of August 16, 2004.
3. Claims 1- 3, 5-12 and 14-25 are presented for examination, of which Claims 1, 10, 19 and 21 are independent claims.
4. The Examiner acknowledges the newly added claims 22-25.
5. The Examiner acknowledges the amendment to Claim 19. All rejections under the 35 U.S.C. 112, second paragraph for Claims 19-20 are hereby withdrawn.
6. Claims 1, 10, 19 and 21, are rejected under 35 U.S.C. 101.
7. Claims 1, 3, 6-10, 12 and 15-21, are rejected under 35 U.S.C. 103(a) as being unpatentable over Pouschine and further in view of Schwartz.
8. Claims 2, 5, 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pouschine and further in view of Leung.
9. Claims 22-25 are objected to as being dependent upon a rejected base claim.

Continued Examination Under 37 CFR 1.114

10. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

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has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 16, 2004 has been entered.

Response to Arguments

11. Applicant's arguments with respect to claims 1, 10, 19 and 21 have been fully considered but are moot in view of the new ground(s) of rejection.

Specification

12. Claim 1, is objected to because of the following informalities: the word "be" is missing from the last limitation between the word "may" and the word "assembled".

Appropriate correction is required.

Claim Rejections - 35 USC § 101

13. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

14. Claims 1- 3, 5-12 and 14-25, are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The basis of this rejection is set forth in a two-prong test of:

- (1) whether the invention is within the technological arts; and
- (2) whether the invention produces a useful, concrete, and tangible result.

For a claimed invention to be statutory, the claimed invention must be within the technological art, such as (a computer implemented method or a computer processor).

Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or advance the technological art fail to promote the “progress of science and the useful arts” (i.e., the physical sciences as opposed to social sciences, for example) and therefore are found to be non-statutory subject matter. For a method claim to pass muster, the recited process must somehow apply, involve, use, or advance the technological arts.

As to technological arts recited in the preamble, mere recitation in the preamble (i.e., intended or field of use) or mere implication of employing a machine or article of manufacture to perform some of the recited steps does not confer statutory subject matter to an otherwise abstract idea unless there is positive recitation in the claim as a whole to breathe life and meaning into the preamble. In Bowman (Ex parte Bowman, 61 USPQ2d 1665, 1671 (BD. Pat. App. & Inter. 2001) (Unpublished), the board affirmed the rejection under U.S.C. 101 as being directed to non-statutory subject matter. Although Bowman discloses transforming physical media into a chart and physically plotting a point on said chart, the Board held that the claimed invention is nothing more than an abstract idea, which is not tied to any technological art or environment.

In the present case, independent claims 1, 10, 19 and 21 all recites an abstract idea at the preamble; in addition, the steps in the claim body merely constructing a query and optimizing a process to evaluate a module, which can be implemented by the mind of a person or by the use of a pencil and paper. In another words, since the

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claimed invention, as a whole, is not within the technological arts as explained above, these claims only constitute an idea and does not apply, involve, use, or advance the technological arts, thus, it is deemed to be directed to non-statutory subject matter.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 1, 3, 6-10, 12 and 15-21, are rejected under 35 U.S.C. 103(a) as being unpatentable over Nicholas Pouschine (U.S. Patent No. 5,918,232 and Pouschine hereinafter) and further in view of Steven Schwartz (U.S. Patent No. 5,584,024 and Schwartz hereinafter).

Regarding Claims 1, 3, 6, 8, 10, 12, 15, 17 and 20, Pouschine discloses, a query structure assembly module based on query rules (Col 4, Line 61-67; see also Figure No. 8, Elements 126, 212 and 202; see also Col 16, Lines 23-35) the query assembly rules being used by the query structure assembly module to evaluate the desired data set (Col 4, Lines 57-58), i.e.

a Domain Modeling Rule Set Preparation Module, a query engine, and an evaluator which communicates with an SQL generator;

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see also Col 16, Lines 35-42, i.e.

This query engine 132 produces the optimized execution tree 214 by combining queries and delegating calculations to the database server, whenever possible. The optimized execution tree 214 is passed to the evaluator 128 which decides whether further data is required from a relational database. If further data is required, evaluator 128 communicates with a Relational DataBase Management System (RDBMS) 216 through an SQL generator 218.

a syntax assembly module for defining at least one query language statement

(Figure No. 8, Element 218; see also Col 16, Lines 23-26), i.e.

The method 200 starts as a Hyperstructure Query Language (HQL) query 202 which is passed to a parser 122 which converts the HQL text to a query component tree 204 which represents the component parts of the query 202.

a process optimization module for evaluating processing options (Col 15, Lines 51-63; see also Figure No. 8, Element 214 and 128; see also Col 5, Lines 1-5) based upon a database schema (Col 14, Lines 57-60), i.e.

The calculation engine 18 (see FIG. 1) uses this information, in combination with information from the other dimensions, to help determine which table to access to get data for the model 50

(Col 16, Lines 43-46), i.e.

Evaluator 128 can also communicate with a math library 220, if a calculation is required, or a sorting and processing system 222, if the process requires ordering of results or sorting in some manner

whereby at least one query language statement may assembled and run against the data source (Figure No. 8, Elements 228, 234 and 236).

Pouschine reference discloses in a second preferred embodiment all of the claimed subject matter set forth above, except the reference does not explicitly indicate in the first limitation of the current Claim the step of basing the defining of a query structure on a plurality of query assembly rules. However Pouschine discloses in another embodiment (embodiment one) the feature of basing the defining of a query structure on a plurality of query assembly rules (Col 4, Lines 36-42), Pouschine also discloses adding these rules to the query (Col 16, Lines 30-33), i.e.

These are provided to Domain Modeling Rule Set Preparation 208 which generates the domain modeling rule set 126, which are then supplied to the calculation engine 18, which takes the applicable rules and adds them to the query tree 204 to produce an execution tree with rules 212 for the query engine

Given the intended broad application of the Pouschine system, it would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of embodiment one with embodiment two in Pouschine reference to optimize the query processing and minimize the time associated with data retrieval especially in large databases.

Pouschine reference in both embodiments discloses all of the claimed subject matter set forth above, except the reference does not explicitly indicate the module for

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evaluating a plurality of methods for generating intermediate data sets. However Shwartz discloses the module for evaluating a plurality of methods for generating intermediate data sets (Conceptual layer) (Figure No. 5, Element 2; see also Col 9, Lines 31-42), i.e.

FIG. 5 shows a high level block diagram of an intelligent query system that embodies the principles of the invention. It is composed of two parts, the Query System 1 and Conceptual Layer 2. Conceptual Layer 2 is composed of information derived from database 3, including table and column information, and information entered by an administrator to provide more intuitive access to the user. Query System 1 uses the information from Conceptual Layer 2 as well as general knowledge about SQL and database querying to limit the user in building queries to only those queries which will produce semantically correct results.

and the ability to reuse them (Figure No. 5), i.e.

specific queries are coded and made available to users via question lists. For example, FIG. 3B shows a simple screen containing a list of predefined queries. Users can choose to run queries directly from the list or make minor modifications to the query before running it.

Given the intended broad application of the Pouschine system, it would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Pouschine with the teachings of Shwartz to include intermediate data sets In order to optimize the query process through simplifying the query language.

Regarding Claims 7 and 16, Pouschine discloses accessing a syntax description (Col 14, Lines 9-13), i.e.

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A SQL Audit facility allows a user to audit HQL queries that are sent from the client to the server and view the series of SQL queries that were generated by the Calculation Engine in the fulfillment of the HQL query.

Regarding Claims 9 and 18, Pouschine discloses wherein the system is a component in an online analytical processing system (Col 11, Lines 49-61; see also Col 32, Lines 63-66).

Regarding claim 19, the limitations of this claim is similar in scope to the rejected claims 1 and 3 above, as Claim 19 is a combination of both Claim 1 and 3. It is therefore rejected as set forth above.

17. Claims 2, 5, 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Necholas Pouschine (U.S. Patent No. 5,918,232 and Pouschine hereinafter), and further in view of Ting Leung (U.S. Patent No. 6,574,623 and Leung hereinafter).

Regarding Claims 2, 5, 11 and 14, Pouschine reference discloses all of the claimed subject matter set forth above (the limitations of Claim 1), except the reference does not explicitly indicate the step of evaluating the size of a selected set of tables, nor does it explicitly indicate the length of the selected path. However Leung discloses evaluating the size of a selected set of tables and the length of the selected path (Col 4, Lines 18-25), i.e.

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Generally, the SQL statements received as input specify only the desired data, but not how to retrieve the data. ***This step considers both the available access paths*** (indexes, sequential reads, etc.) and system held statistics on the data to be accessed (the size of the table, the number of distinct values in a particular column, etc.), to choose what it considers to be the most efficient access path for the query

Given the intended broad application of the Pouschine system, it would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Pouschine with the teachings of Leung to obtain the query results in the quickest way possible (the shortest path to the data source) and from the smallest table size as to minimize the time spent in scanning the data table for the desired information, which leads to increase the system performance by not holding-up the resources.

Regarding Claim 21, the limitations of this claim is similar in scope to the rejected claim 1, above. In addition Pouschine teaches the feature of evaluating during the construction of the query (Col 16, Lines 35-42), i.e.

This query engine 132 produces the optimized execution tree 214 by combining queries and delegating calculations to the database server, whenever possible. The optimized execution tree 214 is passed to the evaluator 128 which decides whether further data is required from a relational database. If further data is required, evaluator 128 communicates with a Relational DataBase Management System (RDBMS) 216 through an SQL generator 218.

Allowable Subject Matter

18. Claims 22-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

19. The following is the Examiner's statement of reasons for the indication of allowable subject matter:

Regarding Claims 22-25, Applicant's particular system, readable medium and associated methods in retrieving and processing data sets from one or more data sources is wherein the process optimization module's evaluation of a plurality of methods for generating intermediate data sets comprises determining whether creation of a permanent table, temporary table, view, derived table, or sub-query is the most efficient method for handling intermediate data calculations in combination with the other limitations of the claims, was not disclosed by, would not have been obvious over, nor would have been fairly suggested by the prior art of record or that encountered in searching of the prior art.

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Points of Contact

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Haythim J. Alaubaidi whose telephone number is (571) 272-4014. The examiner can normally be reached on Monday - Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic, can be reached on (571) 272-4023.


Any response to this office action should be mailed to:

The Commissioner of Patents and Trademarks, Washington, D.C. 20231 or telefax at our fax number (703) 872-9306.

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal Drive, 6th Floor Receptionist, Arlington, Virginia. 22202.

Haythim J. Alaubaidi

Patent Examiner
Technology Center 2100
Art Unit 2161
January 21, 2005


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